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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:)
Leo Gilles) Confirmation No. 7311
)
Serial No. 10/829,536) Group Art Unit 3683
)
Filed: April 22, 2004) Examiner Robert Siconolfi
)
For: DISC BRAKE) Attorney Docket 1-25206

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

APPELLANT'S REPLY BRIEF PURSUANT TO 37 C.F.R. §41.41

Honorable Sir:

This Reply Brief is in response to the Examiner's Answer dated March 24, 2006.
Please charge any necessary fees in connection with this brief to Deposit Account No.
13-0005. A duplicate copy of this page is enclosed.

RESPONSE TO EXAMINER'S ANSWER

The Examiner contends in the first paragraph on page 4 of the Answer that if the stiffness of the pad 36 in WO 99/37939 were so high so as to act as a solid, then at least some of the axial force would bypass the transducer 50 (i.e., force sensor), into the nut 39. This is not correct and reflects a fundamental misunderstanding of how the prior art arrangement works.

In WO 99/37939, the force (generated by the motor 8 and transferred from the motor rotor 12 via gears 14-17 to the screw mechanism 10), is introduced by the nut 39 into the essentially incompressible pad 36, which in turn transmits the axial force to the piston 35. Thus, **all** of the axial force applied by the nut 39 to the pressure pad 36 is necessarily also transmitted to the hydraulic fluid 43 that fills the pad 36. Therefore, the hydraulic fluid 43 thus transmits **all** of the axial force to the transducer 50. In other words, in WO 99/37939 there is no bypassing of the transducer 50.

The Examiner contends in the second paragraph on page 4 of the Answer that the pad 36 in WO 99/37939 is resilient and compressible so that the nut 39 travels to the end of the groove 39' and directly engages the piston 35. This is not correct.

The whole idea behind the arrangement in WO 99/37939 is to **distribute** the axial force from the nut 39 to the piston 35 **evenly**, especially if the nut 39 is **not properly aligned** parallel to the end of the piston. This can be understood from the following example.

Imagine that there was no fluid filled pad 36 in WO 99/37939, so that the nut 39 had to engage the piston 35 **directly** in order to actuate the brake. In this scenario, if the nut 39 was not properly aligned parallel to the piston 35, the point of contact between the nut 39 and the piston 35 would be localized at one edge of the nut 39, thus causing **transverse or radial loadings** through the non-uniform application of the force to the piston 35 (compare WO 99/37939, page 1, lines 20-80). **Thus, the whole object of the fluid filled pad 36 in WO 99/37939 is to act as an intermediate member for ensuring an even distribution or application of the axial force from the nut 39 to the piston 35.** This means that the nut 39 is not intended to directly

engage the piston 35. If the pad 36 merely compressed (as alleged by the Examiner), such the nut 39 travelled to the end of the groove 39' and thereby directly engaged the piston 35, **the pad 36 would not function to provide an even distribution of the actuating force.** Rather, the direct engagement between the nut 39 and the piston 35 would again produce a non-uniform application of the axial force when the nut 39 is not properly aligned with the piston 35. Thus, a **compressible pad 36** as alleged by the Examiner would be contrary to the whole object and teaching of WO 99/37939.

With regards to Claims 27 and 28, The Examiner contends in the first full paragraph on page 5 of the Answer that the term 'second force transmission path' is very broad and WO 99/37939 discloses multiple transmission paths: one path is through arm 2; another is through nut 39 from the outer sections of the pad; and the end of the grooves 39' provide an additional transmission path.

Claims 27 and 28 specifically recite that the "second force transmission path *bypassing the force sensing element*". (Emphasis added). Thus, while the arm 2 of the arrangement in WO 09/37939 could perhaps be considered a separate force transmission path, **that force transmission path does not bypass the force sensing element.** The transducer 50 (i.e., force sensor), shown in Fig. 3 of WO 09/37939 detects all of the axial force applied by the piston 35 to the brake disc 6. That is, although the brake caliper arrangement may distribute the actuating force to both of the brake pads 3 and 5, all of that force is still sensed by the force sensor 50. Thus, WO 09/37939 does not disclose or suggest a "second force transmission path *bypassing the force sensing element*". (Emphasis added).

Respectfully submitted.



Douglas V. Pavelko
Reg. No. 36,888

MacMillan, Sobanski & Todd
One Maritime Plaza, Fifth Floor
720 Water Street
Toledo, Ohio 43604
(419) 255-5900